The gas-port area will be

28.75-^30.43 = 0 m^2 945=10. 17 sq ft.

The gas velocity arrived at is the minimum for the assumed air velocity. If a higher gas velocity is used, the port angles will be changed; if a lower gas velocity is desired, it will entail a corresponding increase in the air velocity. There are an infinite number of combinations which will satisfy the resultant velocity and angle; but any change in one component will react upon the other. An apparently slight change, made without analyzing the conditions, is liable to lead to unexpected results. As there are, necessarily, certain angles and velocities which will give the best results, as well as others which give unreasonable results, the designer must use a certain amoun to fjudgment in coping with the problem. The pressure required to impress this velocity upon the gas will be

d = (30 . 43^2 -*• 19 . 62)0 . 208 = 9 kg 817 per m^2
9 mm 817 of water
0.387 in of water

The velocity of the waste gases passing through the gas-port, based upon the proportional division between the ports, will be

$v \sim Q_t \sim -u$
^ = 35.66^-0.945= 37 m 74 per second
124 ft per second

The draft required will be

5 = (37. 74^2 -19.62)0. 192 =13 kg 94
0 . 55 in of water

The velocity of the waste gases, through the air-port, will be

v = 52.08-J-3.21 = 16 m 25 per second
53 . 06 ft per second

The draft pressure required will be

5 = (16.25^2-^19. 62)0. 192 = 2 kg 577
0.101 in of water

The chimney effect of the gas checkers available for impressing velocity upon the entering gas was 4 kg 236 (0.166 in of water). The gas velocity requires a pressure of 9 mm 817 (0.304 in) of